

REMARKS

Claims 24-62 are presented, apparatus claim 24 and method claim 50 having been independent, and allowable claims 29, 31 and 38 having been re-written as independent. Claims 24 and 32 are amended. Claims 24-49 are apparatus claims, 50-62 are method claims. Due to restriction, the apparatus claims are presently under examination herein, those presently being the claims reading on the species of Fig. 2b. It is pointed out that after allowance of claims reading on the species, then in accordance with the MPEP the next species is to be taken up for examination. It is believed that when the other species are examined, it would be appropriate to add an additional independent apparatus claim.

Appreciation is expressed for Examiner's indication of allowance of claims 29, 31 and 38, which have been re-written in independent form.

It is believed that dependent claims 26 and 42 should be rejoined with the elected species of Fig. 2b. It had been pointed out to Examiner in the Third Preliminary Amendment at page 7, third paragraph, that these claims relate to Fig. 2b. Claim 26 recites that the first zone and second zone are of the first plastic material, and it is believed Examiner may have confused claim 26 with claim 25 which recites first and second different plastic materials being in the first and second zones, respectively. Claim 42 recites that the lateral dimension is a diameter, which by design choice can be produced by the re-joined mass flow of a single plastic filament, such as by passing it through a die similar to that of Fig. 2a. It is respectfully requested that claims 26 and 42 be rejoined.

Claim Rejections:

The claims have been rejected under various §102 sub-paragraphs on each of Bond Pat. 5,128,208; Cansler Pat. 5,786,087; Fitjer Pat. 5,133,590; Rackley Pat. 5,933,906; and German Hans et al. DE 196 40 853 A1, which is assigned to the present assignee.

It is pointed out that the rejection under §102(b) on German Hans '853 is improper, and could at most be made under §102(a), since it published on April 16, 1998, and the present application enjoys the priority of Applicants' German application 198 41 974 with a filing date of September 14, 1998, receipt of which has been acknowledged. (It is believed that Examiner mistakenly considered the cited document's filing date which is Oct. 2, 1996). It is further pointed out that a translation of the PCT application corresponding to Hans '853 (which is assigned to the assignee of the present application) is being made of record in an Information Disclosure Statement, and that U.S. Pat. 6,141,819 (Driesen et al.) is already of record and is the US national phase of the PCT application corresponding to Hans '853 and thus for practical purposes the Examiner may wish to treat it as a translation of Hans '853.

Claim 24 is amended to define, as suggested by Examiner in observing a difference over cited prior art, that at a free end of the toothbrush bristle the first zone is separated from the second zone, not only that there is a region of preferred breaking. Claim 24 is further amended to recite a portion of the feature of dependent claim 32, and described e.g. in the specification at page 4 lines 24-30, that the region of preferred breaking is defined by a refused region of a plastic monofilament's melt mass flow, and to further recite the feature that the interface is substantially free of an internal void, as shown in Fig. 2b. Claim 48 has not been deleted since it its present status is withdrawn and Examiner has not yet examined the other species.

Advantages of the present invention are seen in that the free end of a bristle constructed according to the disclosed embodiments can be slit or split to create high-surface-area teeth-cleaning bristle-lets without complicated equipment or extra processing steps such as slitting tools, rather, the zones define a pre-selected breaking region between them that allows a simple mechanical bristle end-rounding ("grinding/polishing") or beating to splay the bristle ends, and that a toothbrush can be presented to consumers with such fanned ends, as described in the specification at page 2, last paragraph.

Cansler '087 describes a hollow paint brush bristle, not a toothbrush, and a spinneret for its manufacture. He describes the disadvantage of a prior art paint brush in Figure 1B cited by Examiner that it has internal voids 7 and lines of weakness 9 that can lead to fracture. This is described as a problem in paintbrushes that the ends might flag or become fanned. He solves this problem by the improved spinneret of Figure 6 to produce the honeycomb bristle of Fig. 3A/3B with a void in the middle to overcome the disadvantage of the prior art and, as he describes at column 4, line 62 to top of column 5, line 7, to reduce the lines of weakness so the bristle will not be likely to fracture. His specific stated purpose is to produce a bristle with greater fracture resistance, see column 3, line 2. Not only does Cansler not intend his bristle to have an interface that favors preferred breaking, he also has voids.

Fitjer '590 discloses a mascara brush that has bristles extending through the apertures of a spiral wound wire. As Examiner observed, Fitjer uses glue to bind the fibers together during brush formation, then uses a chemical solvent to dissolve the binder. Unlike amended claim 24, Fitjer does not define a zone of breakage between first and second zones that are defined from a divided mass flow of a plastic monofilament at the interface where the zones are re-fused.

Bond '208 also discloses a synthetic paintbrush bristle, not a toothbrush, that is aimed at duplicating the painting performance of natural hog bristles. Bond specifically teaches the use of voids, which may help his paint pick-up, but he has to carefully control the void size, which can be as much as 5% of the area, apparently to balance the considerations of paint pick-up and cleanability so that his bristle is acceptable to the professional paintbrush segment.

Hans '853 does not show or suggest amended Claim 24. Hans '853 was already specifically acknowledged among background prior art in the priority application and in the present application specification at page 1, third paragraph, as employing a plurality of interconnected filaments that are completely separate from one another. Unlike the embodiments of the

present invention, Hans '853 discloses filaments whose formation is completely separate from one another, and which filaments are then mechanically brought into contact with one another by being wound or braided together, and then a solvent applied to fuse the contacting regions. As the present specification states at page 3, last paragraph, the monofilament of the present invention, or as described in amended Claim 24, does not simply connect filaments that have completely separate identity from one another, and thus it is respectfully pointed out that Examiner is not correct at page 5 of the Office Action in characterizing the solvent-welded individual strands of Hans as a monofilament of amended Claim 24. There is no interface in Hans '853 defined by a divided and rejoined mass flow to define a region of preferred breaking.

Rackley '906 discloses a toothbrush bristle formed by a spinneret designed to produce voids in the bristle, indeed voids as much as 20%. Thus, Rackley '906 does not show or suggest amended Claim 24 that recites that the interface is substantially free of an internal void. As Examiner observed, Rackley states "that the voids act to provide optimal splitting", and must be carefully controlled or else he states that you get broken ends (too little) or cracks propagating down the entire bristle (too much), see column 4, lines 56-67. Furthermore, the voids disadvantageously provide unhygienic crevices where bacteria can colonize and make it difficult to clean the toothbrush of toothpaste residue.

Thus, the amended claims are believed patentable over all the cited references, and a Notice of Allowance is respectfully solicited.

Information Disclosure Statement:

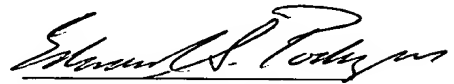
A Second Information Disclosure Statement (I.D.S.) is being made of record. It is pointed out that a translation of the PCT application corresponding to German DE 196 40 852 (Firatli et al.) (which is assigned to the assignee of the present application) is being made of record therein, and that U.S. Pat. 6,094,769 (Driesen et al.) is already of record and is the US national phase of the PCT application corresponding to Firatli '852 and thus for practical

purposes the Examiner may wish to treat it as a translation of Firatli '852.

If a telephone conference would helpfully advance prosecution, the Examiner is invited to telephone the undersigned at 617-421-7939.

Please apply any charges or credits to Deposit Account No. 07-1350.

Respectfully submitted,



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